

*Hab. in Archipelago.*

*Western Group:* Gran Canaria, Tenerife, Palma, Gomera, Hierro.

*Eastern Group:* Doubtful if occurs.

*Obs.* The status of the Resident Quail in the Canaries is very difficult to determine. It has until recently been confused with *C. c. africana* and by all the older writers with *C. c. coturnix*.

Whether or not it occurs in the eastern Canary Islands I have been unable to determine. My own opinion is that it is probably confined to the higher western islands. Proof of this is wanting. The question is more fully dealt with under the preceding species.

*Range beyond the Archipelago.*

Madeira.

[To be continued.]

### III.—*Notes on the Birds of Quetta.*

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(Plate I.—Map.)

THE following notes represent an endeavour to bring up to date the list of birds that have been obtained at or near Quetta at various times. During a residence of nearly two years I had frequent opportunities of visiting almost every portion of the country in the vicinity, and of making the small collection which forms the basis of these notes.

Quetta lies in the highlands of Baluchistan, and though the larger part of the surrounding country is waterless and bare, there are many spots, not only in the hills but in the plains, where thick forest, mountain torrents, fern-clad ravines, and other attractive localities exist.

In the plains, the rivers have cut for themselves deep marshy beds in the soft alluvial soil. In and at the base of the hills nearly all the river-beds are dry, only to contain raging torrents after heavy rain. The huge masses of mountains, rising to over 11,000 feet in places, are covered with juniper, wild briar, and other vegetation, whilst round



Ziarat a dense juniper forest exists. From a distance, such hills as Takatu and Murdar look bare and lifeless, but in reality the vegetation is in places luxuriant and full of bird-life; while, except in these hills, animals during the summer are comparatively scarce, and the number of purely resident species is small; it is when the spring and autumn migrations set in that bird-life is varied and abundant.

Quetta apparently lies on a main migration route, and, as far as I was able to judge, this route lies N.W. and S.E. From observations made of Ducks, Bee-eaters, Larks, and other species there is little doubt of this, though birds are naturally seen migrating in all directions at times. Valleys lying at right angles to this line of migration are comparatively poor in bird-life, whilst valleys parallel to the line are full of it. Migration at Quetta starts early and ends late. In early August the first arrivals appear, while many birds, as yet unknown to breed within Indian limits, are still to be found in late May. It looks as though Quetta was the last halting-place before the final dash to northern climes.

Then there is the local migration from high to low altitudes. It is as regular as the latitudinal migration. The Missel Thrush, Red-billed Cough, several Hawks, and many other species appear to make their local move every winter, returning only a few miles to their breeding haunts every spring, by an ascent of some 5000 feet.

From November to early March the hills are snow-clad, and little bird-life remains except in the juniper forests, though I was never able to find out whether *Trochalopteron lineatum* migrates or not. It seems unlikely that such a delicate bird could brave out a blizzard, so frequent in a Baluchistan winter. Quetta itself is under snow nearly every February, and throughout the winter it is colder there than on average in England.

No one can help noticing the European character of the birds. It is no uncommon thing to walk all day round Quetta in the winter and see nothing but a few Missel Thrushes, Magpies, Rooks, Snipe, perhaps a Woodcock, Bramble Finches, and other such familiar English birds. Quetta is, moreover, one of the few parts of British India

where the Black Kite and Egyptian Vulture are permanently resident. None of the purely Indian Ducks occur, and the familiar Indian birds are absent. The fact is, Baluchistan is not India—it is Persia; and therefore there can be small wonder that so many birds are to be found breeding round Quetta which do so nowhere else within Indian limits.

I am aware that there is still much to be done at Quetta in this line. Further migration observations would be well repaid. A visit to the juniper forests or to some of the large reed-beds in the breeding-season might produce some hitherto unrecorded specimens and eggs. A close watch on migrants will reveal species new as yet to India. Many were the birds I saw but could not obtain or identify, and I found two Warblers' nests and eggs, which certainly did not belong to any of the species enumerated below. Surely if the Bittern and Eared Grebe, Upcher's Warbler and the Allied Grey Shrike, are found breeding, others of equal interest are there, only awaiting discovery.

But the ornithologist at Quetta requires plenty of leisure at his disposal. As a student at the Staff College I was unable to devote as much time as I desired to birds, and I failed to secure specimens of some of the resident species.

My thanks are due to the authorities of the Macmahon Museum at Quetta for the use of their collection and library, and to Dr. Hartert for help in identifying certain geographical races.

Throughout this paper the day of the month is shown thus:—12. iv. = April 12th. Bill measurements are those of the culmen, *i. e.* from the base of the skull.

### **Corvus corax.**

#### *C. c. laurencei* Hume.

An abundant resident, nesting in the hills and in rocks and precipices bordering on the Quetta Plain, but mostly in the more inaccessible parts of the higher mountains. In the cold weather the birds congregate in large flocks round Quetta and can be seen roosting in the poplars in the cantonments, whereas in the hot weather they invariably return to the

hills to roost. I did not detect any more than the "hill to plain" migration in this race, and I doubt whether strangers from other parts visit Quetta in winter.

The breeding-season commences in early March, and full clutches can be found after the middle of that month. Marshall found one of six on 24. iii. (B. N. H. S. Oct. 1902).

Of six birds obtained, the wing in three males varied from 419 to 448, and in three females from 399 to 430 mm.

In the spring and summer this bird may be frequently seen sitting on roofs croaking out his love song, but often intermingled with a metallic bell note which is by no means unpleasant though somewhat monotonous.

*C. c. ruficollis* Lesson. (= *umbrinus*.)

An uncommon winter visitor, arriving in early November. The birds appear to have slightly less brown on the plumage than typical specimens, a longer and more slender bill, and a smaller wing-measurement, and, in fact, would appear to be small hill-forms of *C. c. ruficollis*; but these differences are neither constant nor always apparent. It is possible these birds belong to "*injunatus*," the type of which I have been unable to examine.

**Corvus frugilegus.**

*C. f. frugilegus* L.

A winter visitor in large flocks, but scarce in some years. It usually arrives about the middle of November and leaves again in March. Not being yet satisfied as to the validity of *C. f. tschusii* Hart. as a good race, I prefer placing these birds under the typical form, though it is recognised that in many cases Indian birds have a slender bill.

**Colæus monedula.**

*C. m. collaris* (Drummond).

Rare winter visitor. One seen with a flock of Rooks on 12. xii., and one in the Quetta Museum was obtained at that place on 30. x.

**Pica pica.***P. p. bactriana.*

Locally common and resident, ascending in summer to over 8000 feet, a few breeding in the plains. Fresh eggs found on 10. iv., 27. iv., and 3. v., and fully fledged young on 11. vi. Birds are in full moult at the end of July.

The amount of white on the primaries is very variable, as is the length of the wing.

**Pyrrhonorax pyrrhonorax (L.).**

A common resident, breeding at high altitudes and descending to the plains in flocks in cold weather, when it becomes tame and is an unceasing joy to watch. A small party of four pairs was found nesting on Takatu at 10,000 feet on 10. v. in cracks in an inaccessible cliff.

No specimens were obtained, but several in the Quetta Museum were examined.

Reports of the Yellow-billed Chough occurring at Quetta so far lack confirmation, and I doubt its existence in Baluchistan, for I more than once searched the summits of Takatu, Murdar, Kaliphat, and Zarghun for it.

**Sturnus vulgaris.***S. v. poltaratskyi* Finsch.*S. v. nobilior* Hume.

I obtained four specimens of *poltaratskyi* and two of *nobilior*, all of which I have compared with specimens at Tring and in the British Museum. I was fortunate in securing birds of both races in breeding-plumage on 31. iii. and 14. ii.

Starlings appear in small flocks from October and remain till early April. None breed. Doubtless in a larger series we would find further races wintering at Quetta. Marshall records *humii* from Quetta in March and April.

**Pastor roseus (L.).**

The status of this species in Baluchistan is puzzling. It does not occur in mid-winter. In spring, from the end of

March to the middle of May, small parties can be seen. I saw a pair at 9000 feet on 7.vi. Large flocks of birds of the year were seen near Ziarat at an altitude of above 7000 feet from 14.vii. to 2.viii. in two successive years, and small flocks of adults and young appeared in the Quetta Plains on 10.vii. A female obtained on 8.vii. at Ziarat had lately been sitting on eggs. It is possible that they nest in some of the hills of northern Baluchistan.

### **Oriolus oriolus.**

*O. o. kundoo* Sykes.

A summer visitor in small numbers, arriving in late April and nesting in orchards and gardens, my first eggs being found on 11.v. They leave Quetta in August, and even in summer are seldom found above 6000 feet.

### **Coccothraustes coccothraustes.**

*C. c. humii* Sharpe.

A male obtained at Quetta on 1.iii. was the only one seen, and there are none in the Quetta Museum. Though reported to be common and resident at Chaman I never saw it there.

### **Mycerobas carnipes** (Hodgs.).

A common resident in the hills, feeding on juniper berries and collecting into small parties in winter, but never descending to the plains. A nest found on 7.vi. at 11,000 feet contained four eggs. The nest was a large cup-shaped structure composed of small twigs and coarse grass, lined with fine fibre, and placed on the branch of a juniper five feet from the ground. The eggs were dull white with bold streaks of dark brown round the larger end.

These birds are very noisy when feeding, but if alarmed will sit motionless and silent in a bush. If hunted out they scatter in all directions with clumsy dipping flight, and do not stop their rasping alarm-note till the party is reunited.

**Carduelis carduelis.**

*C. c. major* (Tacz.).

A pair of these northern birds was seen in a flock of *C. caniceps* at Quetta on 27. ii. and one was secured. They compare well with birds from western Asia.

**Carduelis caniceps.**

*C. c. orientalis* (Eversm.).

A winter visitor in fair numbers, arriving in early November and leaving again in early March. A pair was, however, seen on 22. iv.

**Acanthis cannabina.**

*A. c. fringillirostris* (Bp. & Schleg.).

A cock in full breeding-plumage was obtained on 2. iv., a male in the Quetta Museum on 31. iii. A large flock of Linnets seen at Quetta on 14. ii. were probably of this race. Obviously a rare winter visitor.

**Serinus pusillus** (Pall.).

A common nesting species at Ziarat (8000 feet) and on Murdar at 10,500 feet, descending in severe weather to the plains in flocks. A nest found on Zarghun at 9500 feet on 10. v. contained one egg, and was placed on a wild oleander bush three feet from the ground. It was made of grass and lined with cotton and feathers.

**Erythrospiza githaginea.**

*E. g. crassirostris* (Blyth).

Rare and local. One was obtained at Khushdil on 11. vii., when several others were seen which were doubtless breeding. Others were seen near Quetta at Azim on 12. vi.

**Rhodospiza obsoleta** (Licht.).

Resident in small numbers in the Quetta Plains, their numbers increased in spring by summer visitors which arrive in late March. In winter they are to be found in flocks of about twenty, and in spring they scatter to nest in



gardens, &c. A nest found on 4. v. with two eggs was in a vine six feet from the ground, and one with four eggs in a climbing rose seven feet from the ground, the structure being large, made of grass and lined with feathers in each case. The eggs were pale greenish white, with a few dark brown and purplish spots at the base.

***Carpodacus rhodochlamys.***

*C. v. grandis* Blyth.

A fairly common resident in the hills up to 11,000 feet, descending lower in winter. Birds were in full moult at the end of July. Ten specimens obtained in April, May, July, and November compare well with Cashmir birds.

A nest with two eggs was found at 9500 feet on 3. v. and another with four eggs at 11,000 feet on 10. v. Fully fledged young being fed by their parents were noted on 7. vi. The nests were in wild briars three and five feet from the ground, were cup-shaped and made of grass and bark, lined with fine fibres and a few hairs. Eggs pale blue with a few evenly distributed brown spots.

***Carpodacus erythrinus.***

*C. e. roseata* (Hodgs.).

A male in the Quetta Museum was obtained at Ziaraton 6. ix., while Marshall says that the birds are common there in May. I frequently saw them round Quetta in summer, but failed to secure a specimen.

***Uroloncha malabarica* (L.).**

Large flocks observed at Khawas (7500 feet) on 31. vii., out of which I obtained a cock. Another was shot at Kahan on 1. viii. Specimens in the Quetta Museum were obtained there on 9. vii. A nest was found by Cumming in a vine at Baleli on 16. viii.

***Sporæginthus amandava* (L.).**

A small flock was seen near Quetta in August, and several in October and November. A specimen was obtained on 18. x.

**Fringilla montifringilla.**

*F. m. montifringilla* L.

An abundant winter visitor in large flocks, arriving about early November and leaving in late March. Latest date 2. iv. Birds are in full breeding-plumage before moving north.

**Petronia petronia.**

*P. p. intermedia* Hart.

A female in the Quetta Museum was shot near the town on 14. iii. I never observed the birds, and they must be very rare stragglers only.

**Gymnorhis flavicollis.**

*G. f. transfuga* Hart.

A female was obtained on 2. iii. from a small flock. Not otherwise observed.

**Passer domesticus.**

*P. d. indicus* Jard. & Selby.

Three were obtained in March and April.

A summer visitor to towns and villages in northern Baluchistan, the first arrivals being noted in large flocks on 17. iii. These flocks keep to the hill slopes and do not approach the towns for a few days, and it is curious that when out on the hills they are very wild, but become tame at once on entering the inhabited areas, when a fight with the resident Tree-Sparrows at once commences. Nesting begins towards the end of April; the first egg was found on 30. iv. and full clutches were obtained after 8. v. The birds depart in late August and early September.

I twice found nesting colonies in earth-banks, and once in a cliff at 10,000 feet.

**Passer hispaniolensis.**

*P. h. transcaspicus* Tschusi.

None observed, but there are three birds in the Quetta Museum obtained locally on 18. xi. Watson (B. N. H. S. xv. p. 145) reports large flocks at Chaman from October to December.

**Passer montanus.**

*P. m. dilutus* Richm.

An abundant resident. Three obtained in January, May, and December agree with Turkestan specimens.

Fresh eggs were found from 2. iv. to 4. vi., and all nests were near or in human habitations. This species does not ascend beyond 7500 feet. In winter it commonly roosts in bushes and creepers close up against houses, and appears to be able to withstand even a blizzard.

**Emberiza leucocephala** Gm.

A fairly common winter visitor in small parties of from four to ten, first arrivals noted 9. xi. and latest seen and obtained on 28. iv.

**Emberiza melanocephala** Scop.

Only once seen, on 2. viii., when I obtained two adult males at Quetta from a party of nine. Curiously enough, the only specimen in the Quetta Museum was shot on the same date of the previous year.

**Emberiza icterica** Eversm. (= *luteola*.)

Found locally in summer though it probably leaves in winter, but I am not certain of this. Breeds commonly near Ziarat, and probably nests near Baleli and other places in the plains. Four obtained from 14. iv. to 29. vii.

**Emberiza stewarti** Blyth.

An abundant summer visitor, breeding freely between 7000 and 9000 feet. First arrivals noted 4. iv. and last seen 17. x. It is possible that a few remain for the winter.

A nest with two eggs was found on 10. v. and one with four on 10. vi. Both were on the ground on a bank, were constructed of grass and fibre and were unlined. In the first nest the eggs were white, mottled and streaked with reddish brown and purple. In the second they were white, with only a few hair-streaks and mottling.

Young able to fly were seen on 26. vii.

***Emberiza buchanani* Blyth.**

A scarce summer visitor, arriving in the middle of March and not observed after September. Prefers the foot-hills where low bushes and rocks prevail. A nest found on 9. v. contained one egg, dull white with brown and russet mottling and streaks. Another, found on 11. vi., contained four eggs, dull white with russet mottlings and black hair-streaks at the base. In both cases the nest was ill-concealed under a small tufty bush, and was made of grass and was unlined. Another with four newly-hatched young was found on 30. v.

These birds were usually noticed between 5500 and 8000 feet.

***Emberiza cia*.**

*E. c. par* Hart.

A single female, the only one seen, was shot on 11. iii. Four birds obtained near Quetta in November, December, and February are in the Quetta Museum.

Probably a rare winter visitor.

***Emberiza striolata*.**

*E. s. striolata* (Licht.).

A solitary male obtained on 11. ii. was the only specimen observed.

***Melanocorypha bimaculata*.**

*M. b. bimaculata* (Menetr.).

Twice obtained from small flocks—on 4. iii. and 20. xi. A male in the Quetta Museum was shot on 6. iii., and another was obtained by Lindsay on 28. xi.

The bird is probably a scarce bird of passage.

My examples are identical with Turkestan birds.

***Calandrella brachydactyla*.**

*C. b. longipennis* (Eversm.).

A winter visitor in large flocks from late October to late March. Three obtained in January and March compare well with the series at Tring.

**Calandrella acutirostris.***C. a. acutirostris* Hume.

Eight examples were obtained from 17. ii. to 2. viii., but it does not remain as a rule in winter. Fairly common species, though local and confined to the valleys of the foot-hills, where it breeds in small colonies of half-a-dozen pairs. Three nests were found—on 10. v. with one egg, on 31. v. with four eggs, and on 8. vi. with four eggs, two being at 7000 feet and one at 9000 feet. They were small grass-lined scrapings, two in the open and one under a tuft of grass, and were constructed of coarse grass with cotton lining. In two cases the eggs were white with numerous light brown spots, most frequent at the base, while in the third instance the eggs had a well-defined ring of spots at the larger end. Average measurement of nine eggs: .78 by .59 inch.

**Ammomanes deserti.***A. d. iranicus* Zarudny.

A common resident in suitable places, preferring broken ground with no vegetation, but never ascending the hills to any height. Two nests were found—one on 1. v. with four eggs and another on 17. v. with three eggs. Both were under small stones, and were composed of coarse grass-stalks with a lining of finer grass. Eggs milky white, profusely covered with grey and brown spots.

This form agrees well with specimens at Tring from the type-locality in East Persia. They appear darker than *A. d. phænicuroides* on the upper parts. It would seem that the latter form is the plain form, as there are specimens at Tring from Kandabar and Seistan, whereas *iranicus* is the hill form of East Persia, South Afghanistan, and the whole of Baluchistan.

**Galerida cristata.***G. c. magna* Hume.

An abundant resident, but not ascending above 7500 feet.

Laying commences during the last days of April or in early May. The nests found were mere scratchings lined with grass, usually under the shelter of a small bush or stone,

but sometimes in the open. They were always thinly lined with wool, cotton, or fine grass. Eggs dull white, profusely spotted with yellowish and dark brown, with occasionally a few dark streaks at the larger end. Average measurement of eight eggs: .87 by .65 inch.

I unfortunately brought home only one specimen, but I cannot see any difference between it and birds from South Persia and Turkestan.

***Alauda arvensis.***

*A. a. cinerea* Ehmcke.

An abundant winter visitor, commencing to arrive about the middle of November, and first noticed on 11. xi. It was still round Quetta at the end of February.

The wings of two males measured 114 and 115 mm., and of one female 100 mm.

***Alauda gulgula.***

*A. g. inconspicua* Severt.

There were a few pairs of this interesting race breeding round Khushdil Reservoir from May to July, but they were not noted at any other time or place. A nest with three eggs was found on 17. v., all being typical of the Skylark, except that there was a distinct zone of hair-lines round the larger end of the egg. The nest was placed some 150 yards from the water's edge and on almost bare earth, ill-concealed by old withered-up grass-stalks. A similar nest was found at the same place with three newly-hatched young on 11. vii., possibly a second brood.

This is a very distinct, large, and grey form of *gulgula* which has hitherto not been obtained out of Transcaspia and Turkestan. I obtained a pair which compare well with Turkestan birds at Tring. The wing of the male measures 98 and of the female 97 mm.

***Alæmon alaudipes.***

*A. a. pallida* (Blyth).

One obtained on 3. xi. must have been a straggler, as no others were seen and there are none in the Quetta Museum. It is, however, said to occur at Nushki,

**Anthus sordidus.**

*A. s. captus* Hart. (= *Anthus leucophrys captus* Hart.)

*Anthus similis* Oates, Fauna Brit. India.

*Anthus jerdoni* Cat. B. M. x. p. 562.

A common resident, ascending to 9500 feet in summer and wintering lower down. Three nests found contained two, four, and four eggs on 10. v., 23. v., and 23. v. respectively. These nests were of unlined grass, one was placed under the shelter of a small rock and the other two under tufts of grass, all being well hidden. In the first two nests the eggs were brownish white, covered almost evenly with brown and purplish spots. In the third nest the eggs were greyish white with purplish and black spots of various sizes, denser at the base, where they almost formed a zone round the larger end. The average measurement of seven eggs was .87 by .71 inch. A fourth nest found on 9. vi. contained a young Cuckoo (*telephonus*) and two newly-hatched Pipits, one dead chick lying within six inches of the nest. All nests were found between 7500 and 9000 feet.

In all fifteen specimens were obtained. These agree well with specimens from Palestine, whence the type was obtained. Nine males have wings varying from 97 to 105 mm.; five females have wings varying from 91 to 102 mm. Birds were in full moult in the middle of August. Of seven specimens of both sexes shot in May, six have an unspotted breast and one has the normal spotting. At other times of the year all my specimens had the normal spots.

This bird perches freely on trees and telegraph-wires, and though confined to grassy or bush-clad hill-slopes in summer, hangs about water and flooded fields in winter.

I never met with either the Tree-Pipit or Tawny Pipit near Quetta. In view of the frequency of reports to the contrary and the total absence of these birds during my two years' observation at Quetta, I cannot help feeling that they have been mistaken for the Water-Pipit in winter plumage or *Anthus sordidus captus*.

***Anthus spinoletta.****A. s. coutelli* Savigny.

Seven were obtained from 18. x. to 22. iii. A bird on the latter date was in full breeding-plumage.

*A. s. blakistoni* Swinhoe.

One obtained on 18. iii. is undoubtedly of this race.

Water-Pipits arrived in the Quetta Plains in early October, even adults being in winter dress. They remained throughout the winter, the last seen being on 1. iv. They were never in flocks, were usually to be found in small ditches in irrigated fields, and were absurdly tame.

***Oreocorys sylvanus* (Hodgs.).**

A female of this species in the Quetta Museum was obtained near that place on 22. ix.

***Motacilla flava.****M. f. beema* Sykes.

A few were seen on spring passage, none in autumn. The period of passage appears to be from 16. iii. to 20. iv. A pair obtained on 16. iii. are in full breeding-plumage.

*M. f. thunbergi* Billberg. (= *borealis* and *viridis*.)

Never observed on spring passage. A few passed through Quetta during the latter half of August, when I obtained an adult female and an immature bird. Marshall (B. N. H. S. xiv. p. 601) records this form from Quetta in April.

***Motacilla melanocephala.****M. m. melanogriseus* (Homeyer).*M. f. feldeggii* Oates, Fauna Brit. India.

I prefer to keep the Black-headed Wagtails separate from the *Motacilla flava* group.

This race passes through Quetta on spring passage from 15. iii. to 5. v., when it is fairly common, not only near water but on the arid plains, but never in flocks.

Two cocks obtained on 22. iii. and 5. v. They were not observed on autumn passage.



**Motacilla citreola.**

*M. c. citreola* Pall.

These birds were only observed on spring passage, when they commence arriving about the middle of March. By early April they were in thousands, all in breeding-plumage, on the Lora River and elsewhere where shallow water exists, forming a most remarkable sight, which I have only seen equalled by the myriads of various forms of *M. flava* which congregate at Entebbe on the Victoria Nyanza previous to their northward passage. By 26. iv. all had left for the north, and none were seen on the return passage.

*M. c. citreoloides* (Gould).

This race does not arrive in Quetta on spring passage till early April, when it mixes with the previous race, but is never so common, there being about one *citreoloides* to twenty *citreola*, from which it can be told at a glance by its black mantle and larger size. It remains a few days after *citreola* has departed and, except for the few breeding birds, have all gone by 1. v.

I located three pairs breeding, but only succeeded in finding two nests, both containing young—one at Khushdil on 20. vi., and the other at Bostan on 18. vi. In both cases the young were ready to leave the nest.

**Motacilla cinerea.**

*M. c. melanope* Pall.

A widely distributed but very local summer visitor to the mountain streams. Possibly a few remain for the winter. Birds arrive in full breeding-dress about 18. iii., and commence building about 3. v. A nest found at Urak on 2. vi. contained four eggs, and was placed under a large stone among boulders. It was a large structure of fine grass and fibres. A similar nest found at Khawas on 10. vi. contained five half-fledged young. These birds breed between 7000 and 9500 feet.

**Motacilla alba.**

*M. a. dukhunensis* Sykes.

A common winter visitor to the Quetta Plains, arriving during the last days of September and leaving during the first few days of April. Also a common bird of passage in October and March.

*M. a. personata* Gould.

Obtained on 1. iii. and 17. v. Only a few were seen, mostly in spring and autumn, but it is possible that an occasional pair breed, as I saw them at Khushdil throughout May, and near Baliki on 2. vi. None observed in midwinter. Watson (B. N. H. S. xv. p. 145) reports them common at Chaman in winter.

**Cinnyris asiatica** (Lath.).

I am unable to say whether the form which occasionally straggles to Quetta is the typical form or *brevirostris*, as I never obtained a specimen. Examples have, however, been frequently observed, mostly in the early autumn. It would be a matter of great interest to decide the question, as Quetta should be about the junction of the two races.

**Certhia himalayana.**

*C. h. himalayana* Vig.

Four examples were obtained from 24. vii. to 30. vii. between 8500 and 9000 feet at Ziarat, where these birds are not uncommon in the juniper forest. As is the custom of Tree-Creepers, they consort with Tits and Warblers.

My birds agree with Himalayan specimens.

**Tichodroma muraria** (L.).

A not uncommon winter visitor to the hills and plains of the Quetta District, though not observed before 30. x. or after 31. iii. A male obtained on the latter date was in full breeding-plumage.

**Sitta neumayer.**

*S. n. tephronota* Sharpe.

A fairly common resident in suitable country, descending

to the plains in winter and breeding between the 8500 and 9000 feet levels in May. A nest with two eggs was found on 10. v. It was in the cleft of a rock, and was a huge mass of grass and feathers, with hair and cotton lining. The eggs were white, with small rusty spots, mostly at the base. I also noted two birds building in a cleft on 3. v. making a mud foundation and entrance to their nest, and on 31. v. I found five fully-fledged young being fed by their parents. I never once saw this species on a tree, nor was it observed in the Ziarat juniper forest.

Two specimens obtained agree with the series in Tring.

### **Parus major.**

*P. m. intermedius* Sarud. (= *atriceps* Oates, F. B. I.)

Resident in the Quetta District, descending to the plains in winter and breeding in the hills above 8500 feet. A nest found on Zarghun on 3. v. was in a hole in a juniper stump some five feet from the ground, and contained four white eggs with a few reddish-brown spots at the larger end. I did not disturb it. Another nest found on Takatu on 23. v. was in a hole in an old mulberry tree, and beyond hearing the hissing of the old bird inside I experienced nothing.

The one specimen I brought home appears to belong to this form, and agrees with specimens from Turkestan.

### **Parus rufonuchalis.**

*P. r. rufonuchalis* Blyth.

A fairly common resident in the Ziarat juniper forest, seldom descending to the plains. I never observed it nesting, but Captain Hawley states that it commences at Ziarat in early April.

One obtained on 1. viii. agrees with Cashmir specimens.

### **Ægithalos erythrocephalus (Vig.).**

I saw a large party of these Tits at Ziarat throughout July. They seldom left the three or four trees which seemed to be their home, and were so tame that I caught one in a butterfly-net. Marshall observed a pair at Ziarat in May,

and I presume that they are resident in very small numbers.

One example obtained agrees with Himalayan specimens.

**Lanius excubitor.**

*L. e. pallidirostris* Cass. (= *assimilis* Brehm.)

A summer visitor to the foot-hills, and common locally, arriving in early March and leaving in early November. A nest found on 11. vi. at Spereragha contained four young about a week old, the nest being in a wild almond bush about eight feet from the ground and of the usual type. I found it especially common round Kach and Azim from June to August.

Seven obtained from 7. iii. to 2. viii.

*L. e. aucheri* Bp. (= *fullax* Heuglin.)

I obtained males of this race on 27. ix. and 2. x. There is a male in the Quetta Museum from Hirok on 28. vi., and I shot a pair at Mangi on 2. viii. which I was unable to preserve. The specimens I brought home agree well with the series at Tring.

Both *Lanius minor* and *L. excubitor lahtora* have been reported at Quetta. I met with neither bird.

**Lanius vittatus** Valenc.

A fairly common summer visitor, arriving in the early days of April and leaving in late August. Eggs were taken on the first three days of May, only one clutch being full. Half-fledged young were found on 27. v. The nests were large for a Shrike, and composed of twigs, grass, and a few leaves, with a soft lining of rubbish.

**Lanius cristatus.**

*L. c. phanicroides* (Schalow).

A common summer visitor to the hills, arriving in early March and leaving at the end of August. Nests with two and four eggs were found on 26. iv. and 10. v. respectively between 6500 and 8000 feet, but breeding birds were observed up to 9000 feet in June. The nests were slovenly structures in

low thorn bushes. Both clutches were greenish white with a ring of red-brown and purple spots at the larger end.

*L. c. isabellinus* Hemp. & Ehr.

A fairly common bird of passage on both migrations, more so in the spring than in autumn, being commonest in the first half of March. The various reports of this race breeding in the Quetta hills have undoubtedly arisen from a confusion between *isabellinus* and *phoenicuroides*.

Five obtained between 3. iii. and 24. iii.

*Lanius schach.*

*L. s. erythronotus* (Vig.).

A common summer visitor to the Quetta Plains, nesting freely in gardens and orchards. It commences to arrive about 1. iv., and had disappeared by 31. viii. The adults were the first to leave, and were followed a few days later by the young, departures being made during darkness.

Eleven nests with eggs were found between 18. iv. and 19. v., the full clutches of four and five only after the 1st of May. Eggs are laid at an interval of forty-eight hours. All the nests were loose, clumsy, cup-shaped structures of grass, leaves, and twigs, with bits of rag, string or leaves inserted. Four were in peach trees, one in a plum tree, three in apricot trees, three in rose hedges, and one in a vine against a house. Eggs greenish or creamy white, with red-brown blotches and spots, more numerous at the base. Average of ten eggs: .93 by .71 inch.

The first young in nest were found on 26. v., and others in early June.

These large Shrikes have insatiable appetites, and the family habit of slaughtering in excess of requirements is carried to an extreme. One "larder" contained a nestling Sparrow, the head of another small bird, eight beetles, and a piece of rag. Another contained three dragon-flies, four beetles, a butterfly, and two grasshoppers.

*Bombycilla garrulus.*

*B. g. centralasiæ* Polj. (= *Ampelis garrulus* auct.)

One of a pair was shot on 11. xi. No others were seen.

I have compared this bird with the Waxwings in the British Museum, and it is not difficult to pick out the Asiatic birds by the paler and less vinaceous colour of the upper parts. It must be this form which occurred on the North-west Frontier of India in November, February, and March (Ibis, January 1909), at Samarkhand in February (Ibis, July 1910), at Peking in winter (Ibis, January 1903), in northern Siberia south to Vladivostock, and in winter in central and southern China (*cf.* Oberholser, Auk, July 1917).

***Pycnonotus leucotis.***

*P. l. leucotis* (Gould).

One was obtained at Quetta on 14. x. Others in the Quetta Museum were obtained there in August, November, and December, whilst I observed single birds in May, July, and August. Marshall reports them at Quetta in March and April. I suspect that they are rare local residents, for we can scarcely accuse the homely Bulbul of being a straggler, though it may be a question of gradual expansion. The species occurs in east Persia and a race (*Mesopotamia*, Ticehurst) at the head of the Persian Gulf.

***Muscicapa striata.***

*M. s. neumanni* Poche.

A summer visitor to the wooded hills of northern Baluchistan in considerable numbers, breeding freely at and near Ziarat. I did not note the time of arrival, but the birds returned from these haunts about early September. They do not build below 7500 feet. Two nests found containing five and four eggs respectively on 27. v. and 28. v.

***Muscicapa parva.***

*M. p. parva* Bechst.

A common bird of passage throughout March and until about the middle of April. The autumn passage lasts from the middle of September to about 13. xi.

I am unable to separate the two specimens I brought home from the typical form.

**Tchitrea paradisi (L.).**

A straggler which occasionally breeds in the Quetta District. In the spring of both 1913 and 1914 I saw pairs of these birds which looked like nesting, but their preference for gardens was their undoing, and in each case they moved their quarters to less inquisitive climes. Zugmeyer obtained a male at Pishin in September 1911 (Laubmann on "Birds collected by Zugmeyer in Baluchistan").

**Phylloscopus collybita.**

*P. c. tristis* Blyth.

A common bird of passage on both migrations, from the last week of September and throughout October, and again in spring from 27. ii. to 3. iv. An exceptionally early traveller was obtained on 28. vii.

**Phylloscopus neglectus.**

*P. n. neglectus* Hume.

A common summer visitor to the Ziarat juniper forests where, though I never found the nest, there can be no question about its breeding, for it was more or less plentiful throughout June and July. I did not note the time of arrival, but the birds returned from their breeding haunts from about 13. ix. to 30. ix. One obtained on 18. i. was the only example met with in winter.

Of eight specimens obtained, the wings of males vary from 47 to 51 mm. The second primary equals the ninth in three instances, the tenth in two, and the eleventh in two. The first primary extended from 4 to 5.5 mm. beyond the wing-coverts.

**Phylloscopus nitidus.**

*P. n. nitidus* Blyth.

Only observed on autumn passage from 11. x. to 8. xi., when the birds were far from common and usually in small parties of about fifteen among the willow trees near water.

**Phylloscopus indicus** (Jerd.).

This species was found commonly at certain sheltered spots in the juniper forest at Ziarat throughout June and July, usually near water in ravines, where they had no doubt bred, as quite young birds were seen in early June. They were not noted passing either to or from their breeding haunts, but there is a specimen in the Quetta Museum from Nushki obtained during May, which may show they are late spring migrants.

Six obtained, all at 8000 feet near Ziarat. Wing 61-63 mm. Second primary equals the tenth or eleventh.

**Lusciniola melanopogon.**

*L. m. mimica* Mad.

A fairly common bird of passage in spring and autumn, but must be carefully looked for on account of its skulking ways and the very limited area of country suitable for its habits, which are purely aquatic. The bulk appear to move north from the end of February and during the first half of March, and to move south from the last days of August and throughout September. None were observed in winter. A few birds are summer visitors. I only located three pairs breeding, and I found all their nests with eggs—two on the Lora River near Baleli on 1. vi. and 2. vi. with three eggs each, and one at Kuchlak on 14. v. with four eggs. The nests were in dense tangled sedge standing in about a foot of water, and were deep cup-shaped structures of dead reed-stalks, ornamented with grass seed and the flowers of reeds, while in one instance there was a little camel-hair lining. The eggs were very similar to those of the Sedge-Warbler, densely covered with dark- and greenish-brown spots which in two clutches had distinct zones of hair-lines round the larger end of the egg.

Four specimens obtained. Wing of males 62 mm.

**Acrocephalus stentoreus.**

*A. s. brunnescens* (Jerd.).

A few pass through in spring and autumn, being most



noticeable from the end of August to the middle of September, when they are very noisy and can be found in gardens far from water. They are also a summer visitor in small numbers, and most large reed-beds have a breeding pair in summer, where their harsh rasping love-song invariably betrays their presence.

Nests were found on 19. v., 1. vi., and 1. vi. with two, four, and three eggs respectively. They were deep cups of reeds, and all the eggs were particularly handsome, having a greyish-white ground-colour, boldly blotched with reddish, purplish, and dark brown spots. A nest was also found at Khushdil on 19. vi. containing three half-fledged young.

### ***Acrocephalus arundinaceus.***

*A. a. zarudnyi* Hart.

A female was obtained by Zugmeyer at Kelat on 4. x. I did not meet with this bird.

### ***Acrocephalus dumetorum* Blyth.**

I shot a female on 4. iii. Not otherwise observed.

### ***Acrocephalus agricolus.***

*A. a. agricolus* Jerd.

This noisy little bird was only seen on autumn passage. It commenced to arrive on 22. viii., and was last seen on 1. xi., the bulk moving during the last week of August and the first half of September. I had quite expected to find it breeding in haunts which well suited its habits, but not one was seen in either spring or summer.

### ***Hippolais languida* (Hemp. & Ehr.).**

A scarce summer visitor, only found nesting at one place, on the eastern slopes of Takatu between 7500 and 8000 feet. It appears to arrive in early April, the first being obtained on 6. iv. A nest found on 31. v. was in a small bush, 18 inches from the ground, and was made of coarse grass, fibre, and hair with a wool and cotton lining. Eggs pinkish white with a few black and deep purple spots evenly

distributed. A second nest found on 11. vi. was one foot from the ground, both it and its eggs being similar to the above. Each nest contained three eggs, and in each case the bird was sitting. Eggs averaged  $\cdot 75$  by  $\cdot 6$  inch.

**Hippolais pallida.**

*H. p. elvica* Lind.

Baluchistan birds belong to this pale eastern race. A female was obtained at Quetta on 31. viii. There are also two females in the Quetta Museum obtained locally on 12. vi. and 31. viii.

**Hippolais rama** Sykes.

A common summer visitor, but very local as a breeding species, becoming more widely distributed in late July and August. It arrives on its breeding ground during the first few days of April and leaves towards the end of August.

On 19. vi. I found seven nests at Khushdil, one of which contained four newly-hatched young and the others one, three, or four eggs. The nests were from two to three feet from the ground in thick tamarisk bushes near water, were made of coarse grasses and fibres, thinly lined with camel-hair, and were deep cups 1.9 inches deep and 1.8 inches inside diameter from lip to lip.

The eggs were dull pinky white, with a cluster of grey blotches, dark brown and black streaks at the base. The density of the basal markings differed considerably in each clutch. The eggs of one clutch measured  $\cdot 64$  by  $\cdot 51$  inch, and of another  $\cdot 65$  by  $\cdot 51$  inch.

Marshall found this species breeding in Quetta in the middle of May, and there is a clutch in the Museum taken from a garden there in early July.

The wings of eight specimens obtained vary from 60 to 64 mm. The second primary was equal to the seventh in five cases, and to the eighth in three cases.

**Hippolais caligata** (Licht.).

Obtained on 2. x. and 4. x., but not otherwise noted.

***Sylvia hortensis.***

*S. h. crassirostris* Cretzschmar. (= *S. jerdoni* Oates, F. B. I.)

A common summer visitor to the hills, arriving in late April and commencing to move south about the end of August. Nests with five and four eggs were found on 31. v. at 8500 and 9000 feet on Takatu, and with five, four, and five young on 31. v., 7. vi., and 10. vi. between 7500 and 10,000 feet. They were usually in a wild briar or almond bush about three feet from the ground, and were made of coarse grass with a fine grass lining, being 1.6 inches deep inside and 2.4 inches inside diameter from lip to lip. In one case the eggs were white with light brown, bluish brown, and dark brown spots, larger at the base, and in another case the eggs were white with a ring of big bluish black and dark brown spots at the larger end of the egg.

Marshall (B. N. H. S. October 1903) describes a nest placed ten feet from the ground at the end of a drooping branch of a fair-sized tree, composed outside of thin sticks and lined with fibres, the whole being rather a flimsy construction. The eggs were white with spots of two shades of green.

The song of this bird is extremely beautiful and is delivered from the inside and not from the top of a bush. Both parents are adepts at feigning injury when the nest is disturbed, when they will fly and flutter in their distraction almost under an intruder's feet.

***Sylvia communis.***

*S. c. icterops* Menetr.

On 24. vii. when at an altitude of 7500 feet near Ziarat, I noticed a family of what I took to be Whitethroats being fed by their parents. They remained for a fortnight near my tent and I had ample opportunity of observing them. For obvious reasons I refrained from obtaining a specimen for identification. During the next year, on 23. v. on the eastern slopes of Takatu, at 7000 feet, I found a nest with two eggs of this race, and shot the hen bird as she left it.

The nest was in a thorn bush, and was made of coarse grass with a lining of fine grass and hair. Eggs greenish white, spotted and speckled with greenish grey and greenish brown. They measured .71 by .54 inch.

The parent is undoubtedly referable to this form, being much greyer on the flanks than typical specimens and having a wing-measurement of 80 mm.

***Sylvia curruca.***

*S. c. affinis* Blyth.

A female in the Quetta Museum was obtained at Ziarat on 14. viii. I did not meet with this race.

*S. c. minula* Hume. (= *minuscula* Oates, F. B. I.)

Mainly a bird of passage on both migrations, in spring from early March to the end of April, sometimes seen in small parties, and returning again in autumn from October till the third week of November. I did, however, obtain two examples at Ziarat on 21. vii. and 24. vii., and it seems more than likely that they nest there, as I saw several birds of the year, and those that I observed showed no signs of being on passage, but were always to be found in exactly the same place day after day.

***Sylvia althæa* Hume.**

A fairly common summer visitor to the juniper forests of Ziarat, where, though I never found a nest, the birds were in plenty from June to the end of August, and several family parties were seen. Six were obtained between 24. vii. and 30. vii., all in full moult. Their autumn departure was not recorded, neither was their spring arrival, except for one male I obtained at Quetta on 1. iv. They doubtless pass direct from their breeding haunts to the Indian Plains and *vice versa*, without tarrying on their way, as is the custom with most Warblers.

***Sylvia nana.***

*S. n. nana* (Hemp. & Ehr.).

I never met with this bird, but Watson obtained a specimen at Sanzal in northern Baluchistan.

**Agrobates galactotes.**

*A. g. familiaris* (Menetr.).

A scarce bird of passage on both migrations, and may possibly breed at Nushki. I obtained single birds on 1. ii. and 8. viii.; a specimen in the Quetta Museum was obtained at Nushki in May, while Watson procured birds at Chaman in August and at Sanzal in September.

**Scotocerca inquieta.**

*S. i. striata* (Brooks).

A common resident up to 9000 feet in summer and to the Quetta Plains in winter. Four nests found between 8000 and 9000 feet from 20. v. to 7. vi., containing five, five, six, and four eggs respectively. No nest actually rested on the ground, though they almost touched it. They were cunningly placed in thorns, in one case with a huge wild rhubarb leaf bushes, sheltering the nest from the sun.

**Suya crinigera** Hodgs.

The only specimen observed was obtained on Zarghun at 9500 feet on 3. v.

**Prinia gracilis.**

*P. g. lepida* Blyth.

One was obtained at Quetta on 2. viii., while another in the Museum there was shot at Shabrig on 17. xii. It can only be classed as a rare straggler to northern Baluchistan.

**Ianthocincla lineatum** (Vig.) subsp. ?

I obtained one adult and four immature birds at Ziarat between 24. vii. and 26. vii. They were not uncommon in small family parties in the thick bush at the bottom of wooded ravines.

Sarudny (Ornith. Monatsb. xviii. Dec. 1910, p. 188) describes a new race of *Ianthocincla lineatum* from Bokhara. He explains that he has been unable to compare his birds with any Himalayan specimens and is guided solely by Hartert's 'Vögel der pal. Fauna.' His bird, which he names *bilkevitchi*, is too dull and too grey for *Ianth. l. lineatum*. In

some cases the under parts resemble *grisescentior*, in others *gilgit*, whilst in others they are much brighter than in either form. *Bilkevitchi* differs from these (*sic*) forms in the larger amount of grey on the upper parts and, mainly, in the dull olive-red colour of the shoulder and parts of the back, which are marked with white shaft-stripes. Wing 80 to 98 mm.

The wing of the type of "*gilgit*" measures 82 mm., and one in my own collection has a similar wing. Five "*grisescentior*" at Tring vary from 79 to 81 mm. *Ianth.l. lineatum* varies from 74 to 77 mm.

On comparing my birds with the series of *I. lineatum lineatum*, *grisescentior*, and *gilgit* both at Tring and the British Museum, it is clear that they belong to none of these three races, being much greyer and more closely resembling Sarudny's description of *bilkevitchi*.

Three birds from near Quetta have wings of from 80 to 84 mm.

I leave this undoubted new Indian form of *lineatum* without a name, being unable to examine the type of *bilkevitchi*.

Birds from Kohat (N.W. India) belong to *grisescentior*.

#### **Turdus viscivorus.**

*T. v. bonapartei* Cab.

A local but widely distributed resident, confined to juniper forest in summer and descending lower in winter, though seldom actually seen in the plains. In the neighbourhood of Ziarat in 1913 it was particularly common, and from thirty to forty of these huge Thrushes could be seen in a morning.

I found a nest on Zarghun at 9500 feet on 4. iv. which was 14 feet from the ground in the fork of a large juniper, and contained three eggs. Another found by Marshall at 8000 feet on 1. v. was 10 feet from the ground and contained four eggs.

The wing of a male I shot measured 172 mm. and that of a female 163 mm. Both birds are much paler on the upper parts than European specimens, but Hartert (Vög. pal. Fauna) states that this is not constant.

**Turdus ruficollis.**

*T. r. atrogularis* Temm.

Common winter visitors to the Quetta Plains and more sheltered valleys. They arrive in small parties during the first or second week of November and remain till the first week of April.

**Monticola saxatilis (L.).**

A scarce summer visitor, only one breeding pair located. The nest was at 10,000 feet on Takatu, and on 10. v. contained two eggs. I was, however, unable to handle them owing to the inaccessible nature of the cleft in which the nest was placed, but I was able to examine them from above and about ten feet away. The spotless blue of the eggs and the obvious distress of the very conspicuous and noisy parents, left no doubt in my mind as to their identification. On 19. v. I again visited the nest, which now contained five eggs, but the cock bird gave his mate the alarm and I was unable actually to see the hen bird on the nest.

A bird of passage in small numbers during April and early May, and again in October. Occasional in winter.

It is probable these birds breed on most of the higher and wilder hills, as I saw a family party of young and parents near Ziarat on 19. vii. at 8000 feet, from which I obtained a young cock.

**Monticola solitarius.**

*M. s. pandoo* (Sykes). (= *Petrophila cyanus* Oates, F. B. I.)

A regular summer visitor to the higher hills, passing through Quetta from late March together with a number of birds which mean to travel further. They begin to move south from the end of August. None observed in winter.

Two nests were found with eggs. One at 9500 feet on Zarghun with three eggs on 3. v., and another at 8500 feet on Takatu with four eggs on 23. v. In each case the eggs had small red freckles, mostly at the larger end. On 28. vii. I found three young in the nest at 7000 feet near Ziarat.

I have assigned my specimens to this form purely on measurement, three males having wings of 115, 112, 112 mm.

In colour they are identical with European specimens, which separates them at once from *M. s. transcaspicus*, which is apparently also obtained at Quetta on passage, though I never secured one.

### **Myiophoneus temminckii.**

*M. t. temminckii* Vig.

Resident above 7000 feet in nearly every secluded gorge. I found it a very shy bird but with an exquisite song which, when heard resounding through some mossy gorge to the sound of falling water, is a joy never to be forgotten.

I never found a nest, but saw full-grown young being fed on 20. vii.

The wings of two males measured 184 mm. and of one female 177 mm.

### **Ænanthe œnanthe.**

*Æ. œ. œnanthe* (L.). (= *Saxicola œnanthe* Oates, F. B. I.)

An adult male was obtained at Quetta on 17. iii. and an adult female on 18. x. Not otherwise observed.

### **Ænanthe deserti.**

*Æ. d. albifrons* (Brandt). (= *Sax. deserti* Oates, F. B. I.)

A fairly common bird of passage, commencing the autumn passage in late October, while a few remain till the first days of December. It reappears in breeding-plumage from 28. ii., the latest being observed on 29. iv. None were seen in summer, though Marshall reports a nest with young at Quetta on 24. v. Two "*montana*" varieties were obtained on 28. ii. and 4. iii. The wings of males varied from 91 to 96 mm.

There are specimens in the Quetta Museum from the town dated Jan. and Feb.



***Enanthe finschii*.**

*E. f. barnesi* (Oates, F. B. I. 1890).

A fairly common winter visitor to the Quetta Plains from early October (first observed on 9. x.) but disappearing in early December. Not noted at any other time of the year. Though I saw a great number of males I only once saw a female, which I obtained on 18. x. The wings of six males varied from 92 to 95 mm.

***Enanthe isabellina* (Cretzs.).**

A common winter visitor and bird of passage in spring and autumn, arriving on spring passage in the middle of March and passing through in autumn from late August to late October. A fair number are also summer visitors, when they breed not only in the plains but up to 8000 feet. In 1913 I never found a nest and the birds were scarce, but in 1914 they were common and I found nests with eggs from 24. iv. to 2. vi., and two with young on 19. v. and 24. v. Marshall, however, found two nests with young about 20. iv.

Owing to the very confined area in which these birds live during their summer or winter stay in a neighbourhood—often a matter of a few hundred yards, it was not difficult, by plotting out the various pairs, to discover movement. I found the same method most useful with Chats in their winter quarters at Nairobi in East Africa, where a pair of Pleschanka's Chat remained in almost the same acre for over four months, while a single Finsch's Chat remained within less than an acre in the middle of G. H. Q. Camp at Rafa in southern Palestine from 20. x. to the day I left in January.

***Enanthe xanthopygna*.**

*E. x. chrysopygia* (de Filippi).

A rare autumn and winter visitor. I obtained the only two I saw on 16. xi. and 18. viii. in different years. There are also specimens in the Quetta Museum from 11,000 feet and 8000 feet, both shot in November. Watson obtained one at Chaman in September.

The wing of the male I obtained measures 90 mm. and that of the female 92 mm.

***Enanthe picata* (Blyth).**

An abundant summer visitor to the Quetta District, ascending to 11,000 feet but being usually found in largest numbers between 6000 and 8000 feet. They commence to arrive in the first few days of March and leave again in early September. One killed at Mach on 13.i. was very exceptional.

I found nine nests with eggs, the first with two on 2.v. and the last with five on 30.vi. Young were found from 20.v. to 12.vi. The nests were in clefts of the natural rock in six cases, in a heap of stones once, in stone or mud walls three times, and in a wood stack once. They were always far in and well hidden, being large grass structures with a good many feathers, and occasionally a slight wool or hair lining.

The wings of three males vary from 88 to 91 mm.

***Enanthe opistholeuca* (Strick.).**

A rare bird of passage on both migrations. In spring I saw a pair on 24.ii., and there is a male in the Quetta Museum obtained locally on 18.iii. In autumn I shot a female at Quetta on 21.x.

***Saxicola torquata***

*S. t. indica* (Blyth). (*Pratine. maura* Oates, F. B. I.)

Usually an abundant summer visitor to the hills over about 7000 feet, but local. Particularly abundant at Khawas, Ziarat, and Spereragha. The majority of these breeding birds leave the Quetta District altogether in winter, but a few remain and can be found in the plains in sheltered nooks. The movement to the breeding grounds in the hills takes place in April.

I found one nest of this Stonechat at Ziarat on 29.v., containing four eggs, and I saw many fully-fledged young at the same place throughout July.

I do not believe that the true *maura* occurs in India, but winters in southern Arabia, Abyssinia, Somaliland, the Sudan, etc., breeding in the Caucasus and S.W. Persia (Witherby, Ibis, October 1903). At least a quarter of the

tail is white at the base and the upper tail-coverts are without streaks. In *indica*, which breeds from Baluchistan through Cashmir and Turkestan to the Petchora, the tail-coverts are very similar to those of *maura*, but there is less white at the base of the tail.

### **Saxicola caprata.**

*S. c. rossorum* Hart.

A common summer visitor to the Quetta plains and hills, breeding from 5000 to 10,000 feet. First spring arrival was noted on 4. iii., while the latest date in autumn on which one was seen was 11. ix., but Marshall found that this Chat left in October. It is exceptional to find it very far from water, and the majority breed on the plains.

Nests with eggs were found from 26. iv. to 2. vi., and young able to fly were seen on 19. vi. One nest found on Takatu at 10,000 feet on 10. v. contained a Cuckoo's (*telephonus*) egg.

The nests were always in slight holes in a bank, under a large stone or clod of earth.

The white on the breast of males from Quetta extends from the end of the breast-bone to the vent.

### **Chimarrornis leucocephala** (Vig.).

This particularly handsome Redstart was obtained on 2. iii., and another was seen at close quarters near Baleli on 14. iv. It was not observed at any other time. In each case the bird was on rocks by running water.

### **Phœnicurus ochruros.**

*P. o. phœnicuroides* (Moore). (= *Ruticilla rufiventris* Oates, F. B. I.)

An abundant summer visitor to the hills, breeding up to 11,000 feet on Murdar and commonly at Ziarat between 7000 and 9000 feet. I did not note the time of arrival or departure. A nest with five eggs was found on Murdar at 10,500 feet on 7. vi. It was in the broken bark of a dead fallen juniper, and consisted of a mass of grass, feathers, fibre, and juniper bark, lined with fine bits of bark and a few

feathers. The eggs were pure Hedge-Sparrow blue. Another similar nest was found on the same day with three eggs. Young and fully-fledged being fed were found at Ziarat at 7000 feet on 21. vii., whilst other birds of the year had already separated from their parents.

This Redstart sings throughout June and July, and is rarely found in summer far from juniper trees.

Marshall found a nest with four eggs on 13. v. at 9000 feet on a ledge of rock in a cave.

***Phœnicurus erythronota* (Eversm.).**

A common winter visitor to the Quetta District from early November to the middle of March, a few old cocks assuming full breeding-plumage before departure. It was noted that some females remained a few days after all the cocks had left, the last cock being seen on 13. iii. and the last hen on 18. iii.

***Luscinia megarhynchos*.**

*L. m. golzii* (Cab.). (= *Daulias golzi* Oates, F. B. I.)

A male was obtained 2. ii. Another in the Quetta Museum was shot locally on 30. iv.

***Luscinia svecica*.**

*L. s. pallidogularis* (Sar.).

Four males were obtained from 2. xi. to 4. iii.

*L. s. svecica* (L.).

A male was obtained on 26. iii.

Bluethroats are birds of passage on both migrations, in autumn in October and November, and in spring from about 7. iii. to 28. iv. It is, of course, impossible to discriminate the two races without obtaining specimens. These specimens were compared with the series at Tring, but the differences between the various races of *svecica* are so trifling as to make determination open to a certain amount of doubt, though I think, on the whole, that these two races are represented among Quetta specimens.

***Prunella atrogularis* (Brandt).**

A regular, but not very common, winter visitor, arriving only after a cold spell, usually in late November and remaining at least till the first few days of March. Three specimens were obtained on 22. xi., 4. xii., and 2. iii.

***Chelidon rustica*.**

*C. r. rustica* (L.).

A common summer visitor, breeding freely between 5000 and 7000 feet, both in houses and in culverts. The first spring arrival was noted on 28. ii., but the bird was not really plentiful till 6. iii. Eggs were found from 23. iii. to 2. vi., and young in the nest from 19. iv. to 1. vii. About 8. viii. they commenced to flock in mixed parties of old and young, and departure took place about the third week of August. No Swallows were seen after 30. viii.

I observed no trace of any considerable passage of Swallows through Quetta on either migration.

***Chelidon daurica*.**

*C. d. rufula* (Temm.).

An evenly distributed but scarce summer visitor, breeding from 5000 to 11,000 feet. First arrivals noted 21. iii., departure and autumn passage noted in September and October. I never saw these birds otherwise than in pairs or in family parties till September and October, when parties of eleven or twelve could occasionally be seen on passage.

Nest-building was taking place at 8500 feet on Zarghun on 3. v., and a completed nest with parents entering at frequent intervals was seen on Takatu at 10,000 feet on 10. v. On 7. vi. I found two nests with eggs on Murdar at 10,500 and 11,000 feet, and at Khushdil at 5000 feet there were young in a nest on 19. vi.

There is no question regarding the race to which these birds belong, though Marshall records *Chelidon d. nipalensis* from Quetta, which is obviously an error. I obtained five birds, three males and two females. The wings of the males measure 112, 113, and 120 mm., whilst the wings of the

females measure 108 and 114 mm. The red neck-band is continuous on the back of the neck. The lower back and rump are chestnut shading into pale cream on the upper tail-coverts. The breast shows indistinct shaft-stripes. The fact that breeding birds from the same district vary from 112 to 120 mm. in the length of their wings, should dispose of the *Chelidon rufula scullii* (Seeb.), which can only be rather small *Chelidon daurica rufula*.

**Hirundo urbica L.**

Marshall (B. N. H. S. xiv. p 601) obtained a House-Martin near Quetta in May. This appears to be the only record, and as I have not been able to examine the specimen, its subspecific value cannot be determined.

**Riparia riparia.**

*R. r. riparia* (L.).

Obtained on 1. viii. and 4. viii., two single cock birds.

*R. r. diluta* (Sharpe & Wyatt).

An adult male was obtained on 11. vi. and an immature female on 24. vi., the former being a single bird and the latter in a small party of ten. The wings of these two birds each measure 112 mm.

Sand-Martins were observed breeding near Quetta in April by Mr. J. W. N. Cumming, which were probably *diluta*, the typical race being only a passage migrant. I never saw any signs of nesting colonies along the many miles of earth-bank and cliff which I visited in northern Baluchistan.

**Riparia rupestris (Scop.).**

A fairly common summer visitor to the hills, where a few are always to be found nesting in suitable localities. Their time of arrival was not noted. I did not examine any nest, but birds were incubating on 3. v. and 19. vii., and young were in the nest on 7. vi. and 24. vii.

Two obtained, at 10,000 feet on 21. iii. and at 7000 feet on 28. vii. None were observed after 20. viii.

**Apus melba.**

*A. m. melba* (L.).

A fairly common but local summer visitor to all the Quetta hills which I visited, occurring from the highest tops to the lowest valleys. I never found the nesting sites. Marshall states it arrives from the end of April. I noted large parties evidently migrating over Quetta from 23. viii. to 30. viii. A male I shot on 1. viii. has a wing of 209 mm.

**Apus apus.**

*A. a. pekinensis* (Swinb.).

A common summer visitor to the hills. Times of arrival and departure not noted, the first seen being on 2. v. and none being observed for certain after the first week of July. It breeds exclusively in cliffs and caves up to 11,000 feet, apparently laying towards the end of May, and young were heard in a nest on 7. vi. A male obtained on 17. v. is undoubtedly this form.

**Apus affinis** (Gray).

*A. a. galilegensis* (Antinori).

A summer visitor to the Quetta hills, first noted on 22. iv., the latest seen being on 8. viii. Marshall found eggs on 17. v., and I found young in the nest on 7. vi. on Murdar at 8500 feet. One obtained on 20. v. agrees with birds from N. W. Africa and Palestine.

**Caprimulgus europæus.**

*C. e. unwinii* Hume.

An uncommon summer visitor, also a bird of passage noted in spring and autumn. It breeds between 5000 and 9500 feet, three nests with two eggs each being found on 6. v., 10. v., and 28. v. I visited the latter on 3. vi., but the eggs had hatched about the previous day.

No dates of arrival or departure were determined, but passage was most noticeable during April, and from 12. viii. to 1. ix.

**Merops apiaster** L.

A common summer visitor to the Quetta Plains, the earliest arrival being noted on 4. iv., while it was common and had commenced excavating holes by 15. iv. First eggs found on 9. v., and young commenced to appear on the wing on 19. vi. All had left by 1. ix. When the young can fly the breeding colony often disappears for a week or so at a time, returning at intervals to the nesting-site, food-supply being probably the cause of such local movements. Not only bees, but wasps and hornets, with which Quetta abounds, are greedily devoured.

I noted a passage of non-breeding birds at Ziarat at 8000 feet on 24. vii., and this was the only occasion on which I saw them in the hills.

**Merops persicus.**

*M. p. persicus* Pall.

A local summer visitor. In 1914 it nested at Sheikh Wasil in June, and at Khushdil three pairs had eggs on 2. vi. Two were obtained at Khushdil on 17. v.

**Merops orientalis.**

*M. o. beludschicus* Neum. (= *M. viridis* auct.)

There are two examples in the Quetta Museum, both killed in January.

**Upupa epops.**

*U. e. epops* L.

Widely distributed in northern Baluchistan from March to October, breeding at 5000 feet in the plains and up to 9000 feet in the hills. Nests with three, one, and five eggs were found on 14. v., 29. v., and 11. vi. Young were found in the nest on 17. vi. At Ziarat at 9000 feet I saw several full-grown young throughout July.

In winter an occasional bird can be seen, and in February 1914 I noticed one hopping about in snow. I saw another at the top of the Khojak Pass on 12. xi.



**Coracias garrulus.**

*C. g. semenowi* Loudon & Tschusi.

This eastern race of the Roller occurs on passage only, and is never common, though of regular occurrence. In spring it was noted on 7. iv. and 11. iv., and in autumn on 28. vii., while a fair number from 4. viii. to 30. viii.

Two were obtained in August.

**Alcedo atthis.** (= *Alcedo ispada*.)

*A. a. pallasii* Reichenbach.

From late September to early May it can be found wherever there is water. There are specimens in the Quetta Museum obtained in February, April, May, and November.

An occasional pair may breed, but I have no evidence, except that I saw a bird in the hills on 17. vii.

**Halcyon smyrnensis.**

*H. s. smyrnensis* L.

A bird in the Quetta Museum was obtained there on 2. viii. and was doubtless a straggler from Sibi, where it is resident. This bird is of the typical race and not *fusca*.

**Picus squamatus.**

*P. s. flavirostris* (Menzbier). (= *Gecinus gorii* Harg.)

A local resident, observed at Ziarat between 7000 and 8000 feet in July and August, at Sheikh Wasil in October, and at Torkhan in September. There are specimens in the Quetta Museum obtained locally in September and December. I obtained birds at Ziarat on 23. vii. and 1. viii.

**Dryobates scindianus** (Horsf. & Moore).

Resident in small numbers on the Kwaja Amran range of hills between Chaman and the Khojak, where it is usually seen on pistachio trees. It has been occasionally seen in the gardens of Quetta, and I saw another at Pishin.

**Jynx torquilla.**

*J. t. torquilla* L.

Only occurs on spring and autumn passage, apparently in

the last half of April and the first few days of May, and again in the middle of September, but never commonly.

Three birds I obtained cannot be separated from typical European specimens—in fact, I am not yet satisfied that *japonica* is a good subspecies, even after comparing the series at Tring from the mouth of the Amur River with the large series of birds from Turkestan and Europe. *Tschusii* and *mauretunica* are very distinct forms. I have not seen *sarudnyi* described from Transcaspia, but I suspect it is only the typical form of a bird which shows great individual variation in colour and size. I have recently had some very grey examples from Palestine, and at first sight these would appear to be a western Asiatic race, but birds as grey occur in western Europe as breeding individuals, whilst others from western Asia are as dark as any from England and nearly as dark as *tschusii* from Sardinia. The wings of my three Quetta birds, all females, range from 83 to 88 mm.

#### **Cuculus canorus.**

*C. c. telephonus* Heine.

A common summer visitor and bird of passage, but owing to its silence in autumn and the fact that it departs before the foliage is off the trees no dates of departure were recorded. First arrivals appeared on 29.iii., and birds were common by 19.iv. They leave the plains for the hills in the middle of May, ascending up to 10,000 feet.

I heard one calling before daylight at 8000 feet on 11.vi., after which the birds were silent.

An egg in the nest of *Savicola caprata rossorum* on 10.v. was yellowish white, thickly spotted with brownish red and a few purple dots. A young bird newly hatched was found in the nest of *Anthus sordidus captus* on 9.vi.

#### **Palæornis torquatus** (Bodd.).

An irregular straggler, sometimes in small parties, during every month of the year except February and August, but there is no record of nesting in northern Baluchistan.

**Bubo bubo.**

*B. b. turcomanus* (Eversm.). (= *Bubo ignavus*, F. B. I.)

A scarce winter visitor, usually seen singly, from late August to the middle of February. I never saw or heard one in summer. There are several specimens in the Quetta Museum.

I never heard or saw any form of Scops Owl at Quetta, though they have been reported in April. *Otus brucei* has been obtained at Chaman.

**Asio otus.**

*A. o. otus* (L.).

A female in the Quetta Museum was obtained locally on 2. xii.

**Asio flammeus.**

*A. f. flammeus* Pontopp. (*Asio accipitrinus*, F. B. I.)

There are specimens in the Quetta Museum obtained locally on 21. iv. and in January.

**Athene noctua.**

*A. n. bactriana* Hutt.

One specimen was obtained near Chaman on the Afghan border on 22. x. 13. Little Owls were common there, and probably all belong to this race.

**Athene brama.**

*A. b. tarayensis* (Hodgs.).

Little Owls are abundant residents at Quetta, breeding freely in earth-cliffs, and banks, but unfortunately I only secured one specimen and failed to determine the many specimens in the Quetta Museum, where they are all labelled *Athene bactriana*. My bird agrees with examples collected by Sarudny and Härms from Persian Baluchistan, this form being much lighter coloured than *Athene b. brama* of India.

**Falco peregrinus.**

*F. p. peregrinator* Sund.

A female of this race was shot at Khushdil on 26. x. and

others were seen in November, but never at any other time. It would appear, then, that though this race breeds in the northern part of the Punjab and in the North-West Provinces as far south as Kohat (Ibis, 1919, p. 370) it is only a winter visitor to northern Baluchistan.

*F. p. babylonicus* Sel.

An adult female was shot at Ziarat on 23. vii., and others were seen there in June, though no eyrie was found. My female had a wing of 315 mm. I never saw this race away from the hills, where it was never common, but appeared to be resident at Ziarat.

**Falco cherrug.**

*F. c. milvipes* Jerd.

I obtained an immature male of this species at Khusndil on 17. v., and in the Quetta Museum there are local specimens obtained in January and on 18. x. St. John obtained a specimen at Quetta (F. B. I. iii. p. 422).

**Falco jugger** Gray.

Marshall records this species as fairly common in the cold weather, and says that a pair were building a nest high up on the face of a cliff, but gives no further details. There are no specimens in the Quetta Museum, and I certainly did not find the bird at all during the two winters I was in northern Baluchistan.

**Falco subbuteo.**

*F. s. subbuteo* L.

I saw a pair of Hobbies at Ziarat on 24. vii., and there is a male in the Quetta Museum shot locally on 1. x., which belongs to the typical form.

**Falco tinnunculus** L.

A common resident of which I failed to get specimens. Also a plentiful bird of passage and winter visitor. The resident birds breed up to 10,000 feet and also in earth-cliffs at 5000 feet. Marshall took four fresh eggs on 14. v., and I found a nest with two eggs on 21. v.

**Ægyptius monachus** (L.). (= *Vultur monachus* Blanford, F. B. I.)

Not common, though, from its conspicuous size, it is frequently noted, each mountain having one or two pairs which are resident. Delmé-Radcliffe took an egg from a nest on Zarghun at 10,500 feet on 5. iv. (B. N. II. S. xxii. p. 394), and Marshall found a nest with a newly-hatched young bird on 5. v. (*ibid.* xv. p. 351). I found another chick in a nest on Zarghun at 9500 feet on 4. iv., the huge mass of sticks which composed the nest being about 18 feet from the ground in a patriarchal juniper tree.

**Gyps fulvus.**

*G. f. fulvus* (Habl.).

A fairly plentiful resident, though the birds disappear in very severe weather. Marshall found the young already out of the shell on 25. iv.

**Gyps himalayensis** Hume.

A local specimen is in the Quetta Museum, obtained on 10. ii. 10.

**Neophron percnopterus.**

*N. p. percnopterus* (L.).

Never observed in the middle of winter, but a few appear in early March and are seen throughout the summer. Plentiful at Ziarat in July and around Quetta till November. Birds of the year commenced to appear at the refuse dumping ground at Quetta in late July. No nests found.

Quetta birds are of the typical form.

**Gypaëtus barbatus.**

*G. b. grandis* Storr.

A common resident even in the severest weather, and breeding plentifully in the mountains. I estimated there were five pairs nesting on Murdar in 1914. One nest which I located on 2. iv. at 10,000 feet was on the ledge of a cliff, and I could see the old bird sitting, but was unable to get closer than about 50 feet and failed to move her from the nest.

This magnificent bird can be seen any day in cantonments, where it is quite tame. Though a terrible coward and unable to face the attack even of a Raven, I have seen it attempt to carry off a puppy from the verandah of a barrack-room.

The specimens in the Quetta Museum are undoubtedly referable to this race.

***Aquila chrysaetos.***

*A. c. daphanea* Menzb.

Rare in the hills, coming to the plains in winter. Seen at Ziarat on 19. vii. and at Khushdil on 18. iii. Whilst shooting Chukar on 6. xii. a covey of those birds were attacked whilst crossing a broad valley by a Golden Eagle, which burst among them from above and carried one off on the wing, the remainder scattering in all directions and shrieking as they went. Though I have no evidence to show that this bird breeds in northern Baluchistan, there is no reason why it should not do so.

A specimen in the Quetta Museum was obtained near that place on 29. i., and belongs to this race.

***Aquila rapax.***

*A. r. rindhiana* Frankl.

The Indian Tawny Eagle is not uncommon on the plains of northern Baluchistan at all seasons, but I never found a nest. A female in the Quetta Museum was obtained locally on 12. vii., and I observed others in February, April, August, and September.

***Hieraetus fasciatus.***

*H. f. fasciatus* (Vieill.).

Several seen at Ziarat in July at 8000 feet. Marshall found two nests with eggs on 14. v. and 26. v.

***Hieraetus pennatus* (Gm.).**

I frequently saw small Eagles which may have been Booted Eagles, but I never secured one. There is a pair in the Quetta Museum obtained locally on 15. iv. and 23. iv. in different years.

**Buteo ferox.**

*B. f. ferox* (Gm.).

A common bird in the plains from the middle of August to March, and occasionally seen in May. The dark and light phases are equally common, and I obtained a pair hunting together on 17. viii. which were the extremes of each phase.

**Milvus migrans.**

*M. m. gorinda* Sykes.

Occurs plentifully in Quetta throughout the year, eggs being found on 26. iv. and young in the nest from 8. v. to 1. vii.; the clutch varied from two to three. In the hot weather and so soon as the rains break in the plains of India, northern Baluchistan is visited by numbers of this species, presumably from the sweltering plains of Sind or southern Baluchistan. It has been noted that Kites in Calcutta disappear during the rains (Faun. Brit. India).

*M. m. migrans* (Bodd.).

Fairly common but confined to the hills, though I was unable to ascertain whether it leaves in winter. A nest found on Murdar at 8000 feet on 4. v. contained one egg and two newly-hatched young. Common round Ziarat in June and July. Three examples obtained had wing-measurements of 434 and 450 mm. for the males and 472 for the female.

**Elanus cæruleus.**

*E. c. cæruleus* (Desf.).

A rare straggler. An adult was seen on 7. vii. at Quetta; an immature bird in the Quetta Museum was obtained locally on 7. iv.

**Circus cyaneus.**

*C. c. cyaneus* (L.).

A common winter visitor from the middle of October to the middle of April. Three were obtained.

**Circus æruginosus.***C. a. æruginosus* (L.).

Not so common as the Hen Harrier, but can always be seen in suitable places from October to March, being most plentiful in November. Two were obtained.

**Accipiter badius.***A. b. cenchroides* (Severtz.).

A scarce bird of passage in October and April. I obtained males on 17. iv. and 1. x. and a female on 21. x. A pair in the Quetta Museum was shot locally on 8. iv. My specimens compare well with the series in the British Museum.

**Accipiter nisus.***A. n. nisosimilis* (Tick.).

Never seen from April to July in the plains, but of common occurrence near Ziarat in June, where it probably breeds. It is particularly common round Quetta in October and November. Four were obtained, a male's wing measuring 333 mm. and that of a female 435 mm.

**Pelecanus onocrotalus.***P. o. onocrotalus* L.

A female in the Quetta Museum was obtained locally on 14. xii. I saw Pelicans at Seranan on 9. iv., and there were several at Khushdil on 29. iv.

**Phalacrocorax carbo** (L.).

A few are generally to be seen at Khushdil and Seranan from November to July. It is curious that these birds remain so far inland and so far from the breeding grounds in the summer, for I have seen fully adult birds in breeding-plumage at Khushdil in June. None were obtained.

**Ardea cinerea.***A. c. cinerea* L.

I have seen Herons during every month of the year, but chiefly in March, April, and October. I have not heard of their breeding in northern Baluchistan,



I have frequently seen these birds far from water and feeding on lizards and toads, for which they probe in the soft earth and sand. I have seen Herons acting in the same way in the desert of northern Sinai.

**Ardea purpurea.**

*A. p. purpurea* L.

I never met with this bird, but there are two examples in the Quetta Museum of the typical European race, which were shot in March, one at Quetta and the other at Nushki.

**Egretta alba (L.).**

I saw several at Khushdil in March and November. Marshall found them common at Khushdil in February. None were obtained.

**Nycticorax nycticorax.**

*N. n. nycticorax* (L.).

There are several in the Quetta Museum, all obtained locally in March and April. I once saw a single adult in March.

**Ixobrychus minutus.**

*I. m. minutus* (L.). (= *Ardetta minuta*, F. B. I.)

Scarce on passage. Specimens were obtained on 27. iv., 11. vii., and 8. viii. Others in the Quetta Museum were obtained in May and September.

**Ixobrychus sinensis (Gm.).**

Mr. Cumming obtained a specimen at Quetta in March 1907.

**Botaurus stellaris.**

*B. s. stellaris* (L.).

A common winter visitor and bird of passage from November to March, as many as fifteen being flushed in a single day's snipe-shooting near Khushdil.

I have good reason to suspect this species of having bred at Khushdil in 1914, as on 19. vi. I heard the familiar "booming." At daylight next morning I flushed an old

bird and a youngster just able to fly, but the reeds were so thick that I was unable to make further investigations.

**Platalea leucorodia.**

*P. l. major* Temm. & Schleg.

There was a flock of over a hundred at Khushdil on 26. x., and a few in November. A small party of fourteen visited the same lake on 17. v.

**Ciconia alba.**

*C. a. asiatica* Sev.

This large form of the European White Stork is represented by a single bird in the Quetta Museum, obtained at Kahan on 13. ix. 10. I never saw White Storks near Quetta.

**Ciconia nigra (L.).**

I saw solitary birds near Quetta in October, at the end of April, and in November. A specimen in the Quetta Museum was shot locally on 18. iii.

**Plegadis falcinellus (L.).**

Frequently seen in large flocks on the spring passage, and in summer as late as 12. vii. It is curious what a lot of purely gypsy flocks of birds wander about when they should be breeding. I have noted this fact among Pelicans, Storks, and Herons when the birds have been to all appearances fully adult. Can it be that these larger birds miss a year, or are they suffering from the impotence of old age, or is it pure laziness which prevents them re-visiting their breeding haunts? Among Waders, Gulls, and Ducks I believe that those which hang about in summer are all non-breeding immature birds, even though they may be in breeding dress, but among Storks and Herons I have certainly killed fully adult and healthy birds in midsummer in both tropical India and Africa, in places remote from any known breeding haunts.

**Phœnicopterus roseus Pall.**

I saw a flock of thirteen near Quetta on 15. iv.

A large flock settled on Khushdil Lake in early May, and proved to be so exhausted that Mr. A. B. Aitken captured

and pinioned six. When the large flock flew off thirty-seven birds remained behind with the six pinioned ones till the autumn.

#### *Anser anser* (L.).

There is usually a large bunch of these Geese at Khushdil or Seranan in winter, from about the end of October to April. In 1913 six birds remained at Khushdil throughout the summer. On 19. v. 14 a flock of about forty arrived at Khushdil at 2 P.M. in brilliantly fine weather and were so exhausted and thirsty that they drank and slept the whole of that afternoon, allowing me to sit and watch them within fifty yards. They left again the next night.

The Grey Lag was the only Goose identified for certain.

#### *Cygnus bewicki* Yarr.

Mr. A. B. Aitken shot a female on Khushdil on 17. xii. 13. Wing 20 inches. Weight  $14\frac{1}{2}$  pounds. If the supposed eastern race of Bewick's Swan—*jankowskii*—is recognised, this bird should be placed under that name, but it seems more likely that *jankowskii* can be applied to any large example of *bewicki*, though Asiatic examples are, as is the custom with all Asiatic races, generally finer and larger birds. Buturlin found both typical *bewicki* and typical *jankowskii* breeding together in the Delta, so we must conclude they are either not geographical races of the same species, or that they are in themselves distinct species. The latter is of course out of the question, and I prefer to place *jankowskii* as a synonym of *bewicki*.

#### *Cygnus olor* (Gm.).

Large numbers visited Khushdil Reservoir about 1901, and single individuals were observed there in February 1911 and November 1913.

The Mute Swan breeds in Seistan, but the Whooper is only a winter visitor to that area (*teste* Zarudny). I believe MacMahon obtained only the Whooper and concluded that it was this Swan, which he obtained in winter, that bred there.

***Tadorna tadorna* (L.).**

Occasional in winter. I saw six at Khushdil on 19. v. 14

***Casarca ferruginea* (Pall.). (= *Casarca rubila*.)**

An occasional pair visit Khushdil in late winter and spring. The birds breed in Seistan and probably on the Helmund River in Afghanistan.

***Anas platyrhynchos*.**

*A. p. platyrhynchos* L. (= *Anas boschas* auctorum.)

Commences to arrive in early September, and the majority have disappeared by April, but three pairs of non-breeding birds remained at Khushdil throughout the summer of 1914.

The degree of abundance of the usual Ducks to be met with at Khushdil in winter can be best seen by a table, compiled from the results of shooting between 1904 and 1914. The percentage of each species to the total bag is given :—

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Mallard .....	13	30	27	1	9	10
Gadwall .....	24	9	5	16	9	8
Wigeon .....	2	1	2	2	6	5
Pintail .....	18	4	1	1	3	4
Shoveler .....	10	6	3	2	5	6
Marbled Teal .....	1	2	3	8	—	4
Common Teal .....	18	27	39	57	54	48
Common Pochard .....	8	14	15	10	12	11
Red-crested Pochard .....	1	2	2	1	—	2
White-eyed Pochard .....	4	3	2	1	—	1
Tufted Duck .....	1	2	1	1	2	1

***Anas strepera* L.**

A regular and common winter visitor, arriving in late September and leaving in early April, though a few remain till the middle of May.

***Anas acuta* L.**

Passes through in October and November, very few remaining in midwinter. On spring passage they scarcely linger at all, and I never saw them after early April.

**Anas penelope** (L.). (= *Mareca penelope*.)

A common winter visitor from late September to April. I saw a pair at Khushdil on 20. vi.

**Anas angustirostris** Menetr.

I believe this bird to be a summer visitor at irregular intervals and in small quantities, and a winter visitor in small numbers.

In 1913 Mr. Aitken found a Duck and fourteen ducklings on Khushdil in August. In 1914 there were six pairs on the lake throughout June and July, but I neither found nest nor saw any ducklings.

**Anas querquedula** L.

I saw a few at Khushdil on 19. v., and again on 13. xi. and 14. iii., but I have never seen more than one killed in a day.

**Anas crecca** L.

A common winter visitor, commencing to arrive on 24. viii., but not in any quantities till early September, the first few arrivals being single birds of the year. They have all departed by the end of April.

**Spatula clypeata** L.

A common winter visitor, but large numbers are only birds of passage. Not seen after 19. v.

**Netta rufina** (Pall.).

An uncommon winter visitor, occurring from October to March. It is curious that this species should be so rare, as in January and February on the Munchar Lake in Sind it was by far the commonest Duck in a bad "Duck year," and over forty were killed in one day. Their migration route must take a different line to other Ducks; or else they never tarry on their journey.

**Nyroca ferina**.

*N. f. ferina* (L.).

Vast numbers arrive towards the end of September and remain throughout the winter, the bulk leaving in late

April; but there were still hundreds at Khushdil in May and June and a few in July, whilst about ten pairs remained throughout the summer. They were seen courting in May, but there was no evidence of breeding.

**Nyroca nyroca.**

*N. n. nyroca* (Güld.).

A regular winter visitor in small numbers. I killed one as late as 18. v.

**Nyroca fuligula L.**

A regular winter visitor, having been killed as early as 14. viii. and as late as 17. v., but the bulk arrive in late September and leave again in April.

**Bucephala clangula (L.).** (= *Clangula glaucion.*)

Rare in winter—only three occurrences, in February and March.

**Oxyura leucocephala (Scop.).** (= *Erismatura leucocephala.*)

Rare, but in some winters considerable numbers visit northern Baluchistan, usually in October, November, and April.

**Mergus albellus L.**

An irregular winter visitor, sometimes in large numbers, though in other winters only a few individuals arrive. A cock in full breeding-plumage was killed 19. v. at Khushdil.

**Mergus serrator L.**

One was obtained at Khushdil (Baker, Ind. Ducks and their Allies, p. 283). I know of no other occurrence.

**Columba livia.**

*C. l. intermedia* Strick.

A common resident, gathering into flocks in winter. It nests in the underground irrigation channels and in cliffs up to 9000 feet.

The majority of specimens have a distinct grey lower back, but occasionally we see white-banded birds. This

band in the few birds I have handled is about  $2\frac{1}{4}$  inches broad and is really a very pale grey and not pure white, though it seems white when the bird is on the wing.

Eggs were taken on 14. v. and young found on 10. v.

#### **Columba palumbus.**

*C. p. casiotis* Bp.

Fairly common in summer at Ziarat above 7500 feet in the juniper forest. I do not know whether the birds move in winter.

The adult has vermilion legs and toes, and light lemon-yellow irides. Bill orange at the tip and horn-colour at the base. In the immature bird the tip of the bill is pinky horn-colour, gradually merging into the dark ashy colour of the head at its base. Immature birds differ from adults in having no buff spot on the neck.

#### **Streptopelia turtur.**

*S. t. arenicola* (Hart.).

A few stragglers occur in summer (Oates, F. B. I. iv. p. 43).

I never met with this species.

#### **Streptopelia senegalensis.**

*S. s. cambayensis* (Gm.).

Mostly a common summer visitor, but a few remain throughout the winter. In summer they ascend to 8500 feet, but never leave cultivated areas. First eggs found on 3. v. and last on 22. vi. Young in the nest found on 10. vi. This species usually nests in fruit trees, but occasionally on a ledge in the verandah of a house.

#### **Streptopelia decaocto.**

*S. d. decaocto* (Friv.).

A common summer visitor, arriving in March and leaving in October, a stray bird being sometimes seen in winter. Never noted above 6000 feet.

Six nests with eggs were found between 29. iv. and 30. vi.

**Pterocles orientalis** (L.). (= *P. arenarius*.)

A resident, breeding around Quetta in small numbers, eggs being found at Chaman on 29. vi.; a half-fledged young bird is in the Quetta Museum, and I saw pairs at Khushdil on 29. vii. and near Quetta on 10. vi.

Enormous flocks of these birds arrive in November, being only on passage and returning again in March.

**Pterocles coronatus**.

*P. c. atratus* Hart.

A male in the Quetta Museum was shot at Said Hamid on 23. xii. 08. No other record.

**Pterocles alchata**.

*P. a. caudacutus* (Gm.).

Arrives in large numbers in November, usually congregating near Said Hamid and watering in the Lora River. It almost entirely disappears in winter, but passes through in thousands again in the first half of March.

**Pterocles senegallus** (L.).

A female in the Quetta Museum was shot at Said Hamid on 26. xi. 07. No other record.

**Alectoris græca** (Meisner).

Common on all the hills up to 11,000 feet in summer, but never leaving them even in winter. It is equally fond of cultivation in the hill-valleys, the bare rocky slopes of some wind-swept ridge, or the glades in juniper forests of Ziarat. Young of the size of Quail were seen at 8000 feet on 31. v., and several half-grown broods in early June. Nests with nine and six eggs were found on 27. iv. and 3. v. at 8500 and 9000 feet, in each case being but a mere scratching under a thin bush sparingly lined with a little withered grass.

I very foolishly omitted to preserve specimens, so am unable to say to which race they belong.



***Ammoperdix griseogularis.***

*A. g. griseogularis* (Brandt). (= *Ammoperdix bonhami* Blanford, F. B. I.)

A common resident in suitable localities, both in the low hills and in the plains. The word "shooting" when applied to this inveterate little runner is most misleading. The word "hunting" would be more appropriate, for it is necessary to run, and run hard, over abominable ground to be successful.

Three nests with eleven, seven, and nine eggs respectively were found on 18. iv., 10. v., and 12. v. between 5000 and 8000 feet. In one case the nest was under a small rock, and in the other cases under a camel-thorn bush, being mere scratchings with a few pieces of grass and leaf at the bottom.

***Fracolinus francolinus.***

I shot an adult male of the Black Partridge at Quetta on 3. xii. 13. The nearest place to Quetta where this bird normally occurs is at Sibi, on the borders of Sind. It is therefore possible that my specimen had strayed from Sibi or that it was an escaped bird, for natives often keep it. The record being so unsatisfactory I ate the bird. The Quetta race should be *F. f. henrici* Bp., which ranges from Seistan to Sind.

***Coturnix coturnix.***

*C. c. coturnix* (L.).

Occasionally seen in the spring and autumn. I saw one in the Spin Karez on 9. viii. ; and a nest with eggs, now in the Quetta Museum, was found by a native at the end of May 1914 near the town.

***Rallus aquaticus.***

*R. a. korezevi* Sar.

I obtained a male on 1. iii. and a female on 23. xi. There is also a specimen in the Quetta Museum obtained on 14. xii. No other records.

All these specimens are of the pale Asiatic race.

**Porzana parva** (Scop.).

This species has been observed passing through Quetta on migration (Blanford, F. B. I.). I never observed it.

**Porzana pusilla.**

*P. p. pusilla* (Pall.).

I obtained specimens at Quetta on 24. viii. and 31. viii., about which time the bird was common, though not seen at any other time.

**Porzana porzana** (L.).

I obtained a male on 31. x. There are specimens in the Quetta Museum obtained locally in October and November.

**Porphyrio poliocephalus** (Lath.).

Marshall saw seven or eight of these birds in a reed-bed near Quetta in August (B. N. H. S. xv. p. 351).

**Fulica atra.**

*F. a. atra* (L.).

I obtained a partial albino at Khushdil on 14. iii. These birds are common throughout the year at Khushdil, and occasionally come to the Lora River. Though there were hundreds at Khushdil in May, June, and July, there was not a sign of their breeding, and so far as I could ascertain this occurs every year.

**Chlamydotis undulata.**

*C. u. macqueeni* (Gray).

Only observed during the spring passage, when large numbers arrive on the plains between Pishin and the Kwaja Amran range in late March and during April, taking a heavy toll of the young wheat.

As many as sixty have been shot by four guns in a day.

**Hydrophasianus chirurgus** (Scop.).

A solitary individual of this unmistakable species put in an appearance at Khushdil on 11. vii. 14, having doubtless strayed from Sind, where it is common.

**Burhinus œdicnemus.**

*B. œ. astutus* Hart.

I shot a pair in the Popalzai Forest on 9. iv., but was unable to preserve them. Their wings measured 239 and 241 mm. There is a male in the Quetta Museum obtained at Seranan on 12. x. Marshall procured one in March. It is probable that this species is an uncommon resident, the country being well suited to its habits.

**Cursorius gallicus.**

*C. g. gallicus* (Gm.).

I saw a few pairs near Quetta in April 1913, but failed to secure a specimen. Marshall obtained them in September, and there is a male in the Quetta Museum obtained locally on 1. iii.

**Sarcogrammus indicus** (Bodd.).

I saw a pair at Seranan in February 1914, and again on the Lora River on 15. viii. Marshall obtained one in March, and there are specimens in the Quetta Museum obtained in February.

**Vanellus vanellus** (L.).

A regular winter visitor in large flocks from October onwards.

**Chettusia leucura** (Licht.).

There are several in the Quetta Museum obtained in September and December. I did not observe this species.

**Charadrius leschenaulti** Less. (= *geoffroyi*.)

Marshall obtained one in March at Quetta.

**Charadrius alexandrinus.**

*C. a. alexandrinus* L.

A plentiful summer visitor to Khushdil, arriving in early April and leaving in early September. Three nests with three, one, and four eggs respectively, were found on 18. v., 18. v., and 2. vi. On 20. vi. I came across three newly-hatched chicks. These birds confined themselves to

the mud shores, where scrubby tamarisk was growing. I never saw them on the shingle.

**Charadrius dubius.**

*C. d. jerdoni* (Legge).

A common summer visitor, arriving in suitable localities in early March and leaving about the end of August. It breeds at Khushdil and on gravelly reaches of the lower Lora.

Five nests with eggs were found from 3. vi. to 19. vi., all at Khushdil, except one on the Lora at Seranan. The nests were close to the water's edge. Two lots of newly-hatched young were seen at Khushdil on 20. vi.

**Hæmatopus ostralegus L.**

Observed on passage at Khushdil on 29. iv. and 17. v.

**Himantopus himantopus.**

*H. h. himantopus* (L.).

A few arrive as summer visitors in early March and leave again in August. They bred at Khushdil in 1913 and 1914, but in the latter year a sudden rise in the water flooded all the eggs and no young were hatched. Full clutches of three were laid by 10. vi.

**Recurvirostra avosetta.**

*R. a. avosetta* L.

These birds arrive singly or in pairs in early March, but are never common. In 1914 they did not breed at Khushdil. In 1913 one pair nested there, but in handling the eggs the apology for a nest was accidentally disturbed. On the following morning a similar clutch of eggs was found on the opposite side of the lake, some 600 yards across, where there had been no nest the previous day, and the eggs had gone from the original nest. As there was but one pair of these birds on Khushdil at the time, they must have transported their eggs somehow across the lake,

**Scolopax rusticola.**

*S. r. rusticola* L.

A regular but scarce winter visitor from October to February, occurring from 5000 to 8000 feet.

**Gallinago gallinago.**

*G. g. gallinago* (L.).

A common bird of passage, commencing to arrive in mid-August, the bulk passing in September. It becomes scarce in the middle of winter, passing north again during March and a few remaining till the end of April. Eighty-three couple is the record bag, and was obtained in March 1914.

I heard a Snipe "bleating" on the Lora on 17.iii.

**Gallinago solitaria** Hodgs.

Until 1913 this species was only known from Quetta by a single example in the Museum, obtained in October 1909. In 1913, however, more than fifteen were shot, mostly in October and between 5000 and 9000 feet.

I shot two females on 25. x. and 23. xi.

**Limnocyptes gallinula** (L.).

The Jack Snipe is seldom seen near Quetta before the middle of October, but it remains till the middle of April and is particularly common on the spring passage, when I have seen as many as a hundred in a day.

**Phalaropus lobatus** (L.). (= *hyperboreus*.)

Two in the Quetta Museum were obtained in May and September. I shot an adult female on 28.iii. and saw others at Seranan on 6.iii.

**Erolia minuta** (Leisl.).

Plentiful on passage at Khushdil during October and in the middle of April. Not noted in winter. One was obtained as late as 17. v.

***Erolia ferruginea* (Brünn.).**

Only seen on spring passage, when it was common at Khushdil from 16. v. to 20. v., in full breeding-plumage.

***Erolia alpina*.**

*E. a. alpina* (L.).

Noted on autumn passage on 30. xi., and again sparingly in spring between 16. v. and 20. v. travelling with Curlew Sandpipers. The spring birds were in full breeding-plumage.

***Erolia canutus*.**

*E. c. canutus* (L.).

A female was obtained on 26. iii. at Khushdil. This was a solitary bird, and no others were observed.

***Philomachus pugnax* (L.). (= *Machetes pugnax*.)**

Only noted on spring passage, when large flocks appeared at Seranan and Khushdil throughout March. None of the males showed any signs of breeding-plumage.

***Tringa totanus* (L.).**

I saw Redshanks at Khushdil on 19. v., when three rested there on their northward passage. One was obtained on 26. x., from a flock of eight.

***Tringa erythropus* (Pall.). (= *T. fuscus*.)**

I shot one from a flock of eight feeding on some flooded fields near Khushdil on 26. x. 13. No other records.

***Tringa nebularia* (Günn.).**

A female in the Quetta Museum shot locally on 9. xi. is the only record.

***Tringa stagnatilis* (Bechst.).**

A female shot at Seranan on 15. viii. constitutes the only record.

***Tringa ochropus* L.**

The commonest Sandpiper in autumn, winter, and spring, a few remaining throughout the year and ascending streams to over 8000 feet. No evidence of breeding.

**Tringa glareola** L.

Mostly a bird of passage throughout April and May, when it is plentiful. It reappears in smaller numbers in August, a few remaining for the winter.

**Tringa hypoleuca** L.

Common on passage from early April to the end of May. The return passage commences with August. Not seen in winter.

There was a pair of these birds on the Urak Stream throughout May and June 1914, at about 9000 feet. From their behaviour I am convinced that they were nesting, as on 3. vi. one of them disappeared. My search for the brooding bird was futile, but when I visited the place again in early August both parents and certainly two birds of the year were there.

**Numenius arquatus** L.

Uncommon on both passages. Noted on 9. iv., 12. viii., and 30. xi. None were obtained.

**Hydrochelidon leucopareia.** (= *hybrida*.)

*H. l. indica* (Steph.).

There were several at Khushdil throughout May 1914, when I obtained adults in breeding-plumage.

**Hydroprogne tschegrava.** (= *Sterna caspia*.)

*H. t. tschegrava* (Lep.).

A large flock appeared at Khushdil on 30. iv. 14, and remained there till 17. v. On 20. vi. there was still a pair, but they went off a few days later.

**Sterna hirundo** L.

Plentiful at Khushdil in May and early June, 1914. Not observed at any other time. None were obtained.

**Larus ridibundus** L.

A common winter visitor from the middle of October till April, a few remaining till the end of May. During the first week of March 1914 there were thousands on the Quetta plains. I never saw the breeding-plumage assumed there.

**Larus argentatus.***L. a. cachinnans* Pall.

A flock of twenty-four of these Yellow-legged Herring-Gulls stopped a day at Khushdil on 17.iv.14. No other record.

**Larus ichthyaëtus** Pall.

A female in the Quetta Museum was shot at Seranan on 29.iii.10. I never observed this species.

**Podiceps cristatus.***P. c. cristatus* (L.).

Summer visitor to Khushdil. In 1913 three nests with eggs were found by Mr. Aitken on 12.viii., one clutch consisting of five eggs. In 1914 there was only one pair at Khushdil, and I do not think that they bred, though they were there throughout June and July. There are specimens in the Quetta Museum shot at Khushdil in March.

**Podiceps nigricollis.***P. n. nigricollis* Brehm.

There were none at Khushdil in 1913. In 1914 five pairs arrived during the first week of May, and on visiting the lake again on 20.vi. I found them there in hundreds and located over seventy nests with eggs, all confined to about an acre of water two feet deep. The nests were entirely made of weed-stalks, and measured from 15 to 18 inches across at the top. They mostly contained three eggs; two contained five eggs. In only a few cases were they concealed by weeds.

Unfortunately, owing to a heavy rainfall about 27.vi., the water rose two feet, flooding all the nests, which were firmly attached to the bottom. On revisiting the lake on 11.vii. not a nest was to be seen and all the birds had left.

This case of the Eared Grebe nesting in northern Baluchistan is interesting, as showing that the species probably migrates in flocks, that it breeds in colonies, and that it firmly attaches its nests to the weeds at the bottom, for the



structures, still with the eggs, could be seen two feet under water on 11. vii.

**Podiceps ruficollis.**

*P. r. capensis* (Salvad.). (= *albipennis*.)

Resident at Khushdil and breeding freely. Over one hundred and fifty bred there in 1913, and in 1914 I found over a hundred nests on 20. vi., mostly containing three eggs; several had four, one seven, and one six. In nearly every case the eggs were concealed by weeds. The nests were made of weed foliage and not stalks, and never measured over 12 inches across the top.

When the previous species was flooded out this Grebe scored by having its nest floating, and on 11. vii. all eggs were hatched except in two cases.

Though this species occurs at Khushdil in large numbers it is probable many go south at the approach of cold weather, for they did not seem so numerous in winter as they had been after the young were hatched.

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IV.—*Notes on the Birds of Southern Palestine.*

By Colonel R. MEINERTZHAGEN, M.B.O.U.

(Plate II.—Map.)

THE following paper is based on a collection made by Colonel Lord W. Percy, Major Maurice Portal, and myself from May 1917 to March 1919, though considerable intervals occurred when, for various reasons, no work could be done. The bulk of the collection was made at Rafa in the autumn of 1917 and round Ramleh in 1918, whilst Major Portal visited Mount Carmel, the Jordan Valley, and several spots on the Judæan highlands.

A few additions to our notes have been borrowed from Major Sladen's paper in 'The Ibis' of April 1919, and I have made free use of some valuable information from Brig.-Gen. Clarke.

We owe much to the kindness of Mr. M. J. Nicoll, of the